

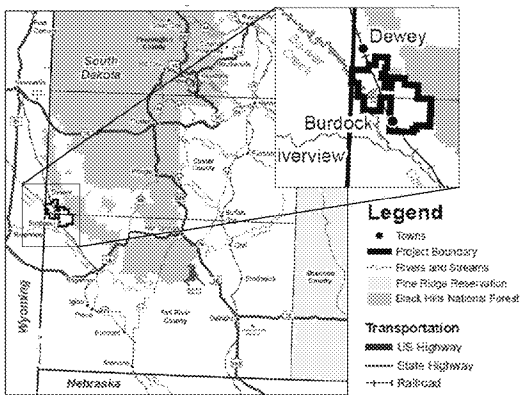
**U.S. Environmental Protection Agency
Underground Injection Control Program**

**EPA Session:
*Information on the Dewey-Burdock Uranium Site
near Edgemont, South Dakota***

*Prepared for: The EPA Tribal Inform and Educate Meeting
with Tribal Historic Preservation Officers, September 10, 2015
Bismarck, North Dakota*



Dewey-Burdock Location Map



EPA Dewey-Burdock Permit Process

- EPA's Role
 - Underground Injection Control (UIC) Program & Regulatory Mission
 - UIC Permits
 - Aquifer Exemption
- EPA Outreach
 - Public Hearings in SD
 - Additional Tribal Community Outreach
 - Continuing Tribal Consultation
- UIC Permitting Process
 - Technical Analysis
 - Tribal Consultation
 - Draft Permits
 - Public Participation Process

EPA Dewey-Burdock Permit Process: Tribal Consultation

EPA's Policy is to consult on a government-to-government basis with federally recognized tribal governments when EPA actions and decisions may affect tribal interests.

The EPA views Consultation as a process of meaningful communication and coordination between EPA and tribal officials prior to EPA taking actions or implementing decisions that may affect tribes.

Current EPA Tribal Consultation Schedule:

- 8/10/15-10/15/15: Informational Meetings involving all Tribes with possible interest in site.
- Engage Tribal Historic Preservation Office (or other relevant tribal government cultural/historic preservation office) to participate in consultation, review, and/or participate in Bismarck, ND meeting in September 10, 2015.
- Meeting with Nebraska and Oklahoma Tribes: TBD
- Potential meeting with Tribal Leaders at the Great Plains Tribal Chairman's Association meeting in Rapid City, late September, 2015
- Informational Conference call(s): TBD
- 10/1/15- TBD: Formal Consultation with Tribes upon request.

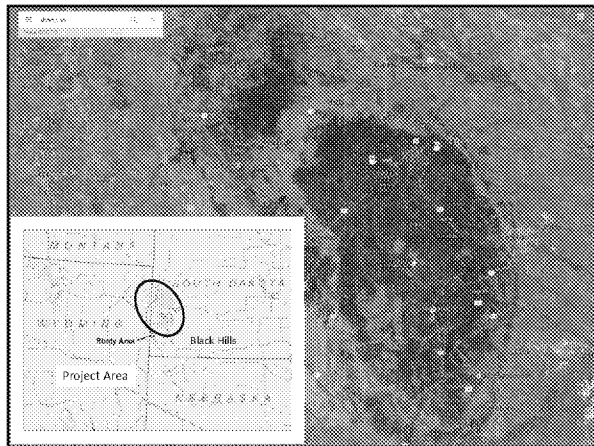
Opportunities for Tribal Participation Informal and Formal Government-to-Government Consultation

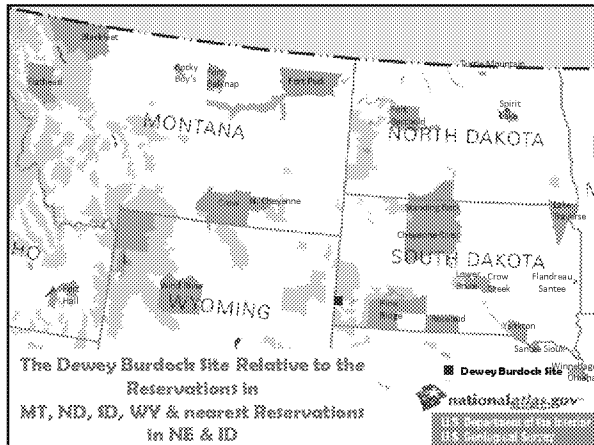
- Informal Opportunities:
 - THPO Conference -- September 10, 2015, Bismarck, ND
 - Meetings with Nebraska and Oklahoma Tribes -- October, 2015
 - Conference Calls -- TBA
- Formal Opportunities:
 - Tribes will receive a formal consultation invitation.
 - Tribe may respond and request formal consultation.
- Review and comment on any proposed permit and aquifer exemption decisions.
- Attend Public Hearings.
- Request additional informational web conferences.
- Request additional informal and formal consultation.

EPA Region 8 Underground Injection Control Program Permit

Applications for the Proposed Dewey Burdock Uranium In-Situ Recovery Site near Edgemont, South Dakota

Valois Shea, MS, PG
EPA Region 8
Underground Injection Control Program





**Regulatory Authority of the
Underground Injection Control Program at
the Dewey Burdock Site**

The UIC Program is authorized under the Safe Drinking Water Act to protect *Underground Sources of Drinking Water* from contamination resulting from injection activities.

Underground source of drinking water (USDW) means an aquifer or part of an aquifer which supplies drinking water or contains fewer than 10,000 mg/l total dissolved solids.

**Other Regulatory Agencies at the
Dewey-Burdock Site**

- The Nuclear Regulatory Commission issued a License for the entire site.
- The South Dakota Department of Environment and Natural Resources has proposed issuance of a Large Mine Permit for the entire site.
- The BLM approved a Plan of Operations for portions of the site on BLM land.
- The South Dakota Department of Environment and Natural Resources has proposed issuance of a groundwater discharge permit for the land application of treated ISR waste fluids.

**The EPA Region 8 UIC Program
Has Received
Permit Applications
for Two Types of Injection Wells:**

1. A Class III Permit Application for the injection of lixiviant to mobilize uranium in the ore bodies.
2. A Class V Permit Application for the disposal of treated ISR waste fluids into deep wells.

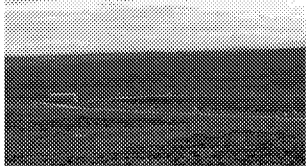
**Regulatory Authority of the
Underground Injection Control Program at
the Dewey Burdock Site**

UIC Program regulations specify the following requirements for injection wells:

- construction,
- operation,
- monitoring,
- closure,
- financial assurance.

Dewey-Burdock Uranium In-Situ Recovery Site

- The Dewey-Burdock site will recover uranium using injection wells.
- There will be no open pits, underground mine workings or tailings piles.
- There will be water storage and treatment ponds.
- The uranium will be extracted from the ore deposit using injection wells.
- The uranium-bearing solution will be pumped to the surface using extraction wells.



Example of an In-Situ Uranium Recovery Site in WY

What In-Situ Recovery of Uranium Looks Like



Drilling to Install Wellfield

View of Charleston Ranch U.S. Mine (CopperheadREU) Pioneer Water Basin, Wyoming

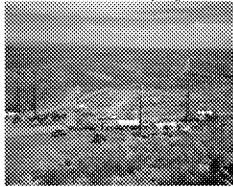
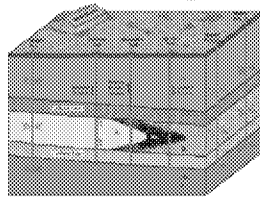
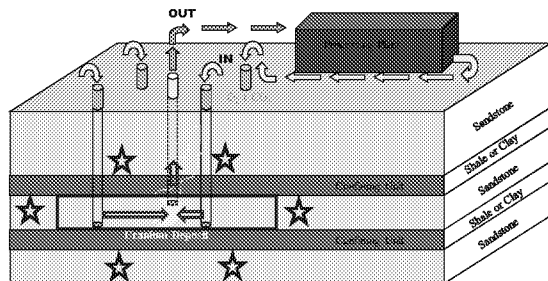


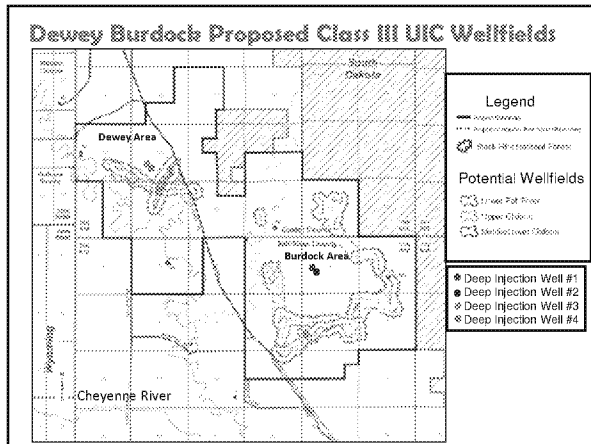
Photo by Tom Schuchman



Uranium In-Situ Recovery Process



★ Monitoring locations

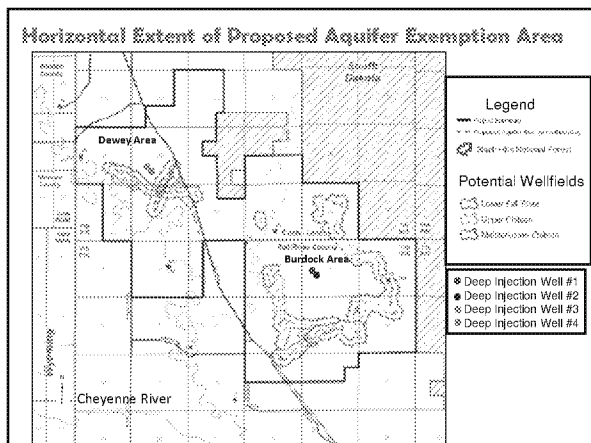


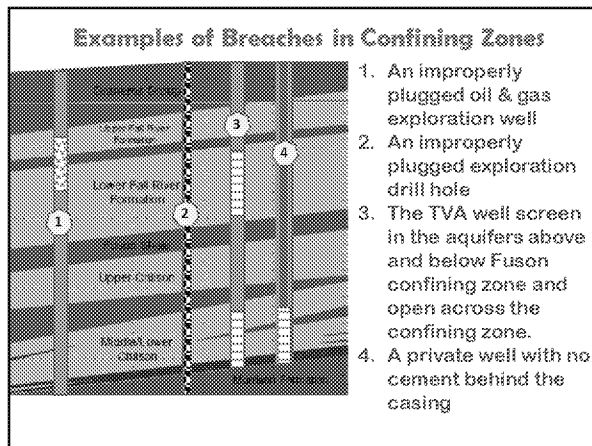
The EPA has been requested to Review an Aquifer Exemption

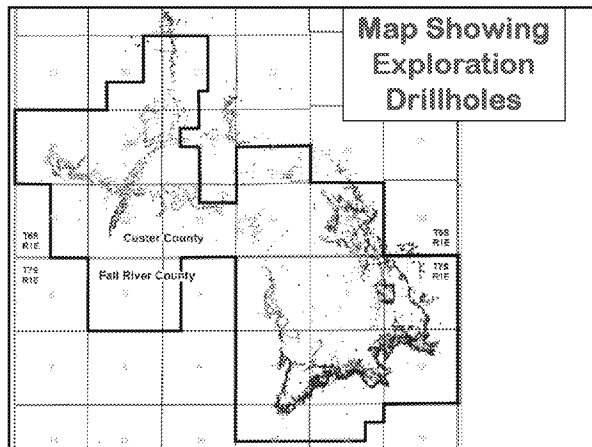
An Aquifer Exemption is required to inject into the Class III wells for uranium recovery.

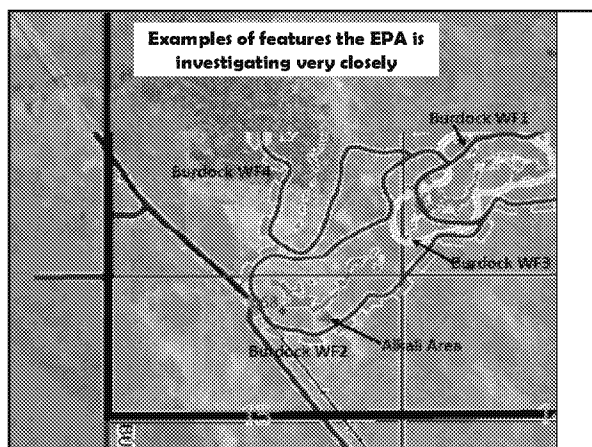
An Aquifer Exemption is allowed under UIC regulations IF the USDW

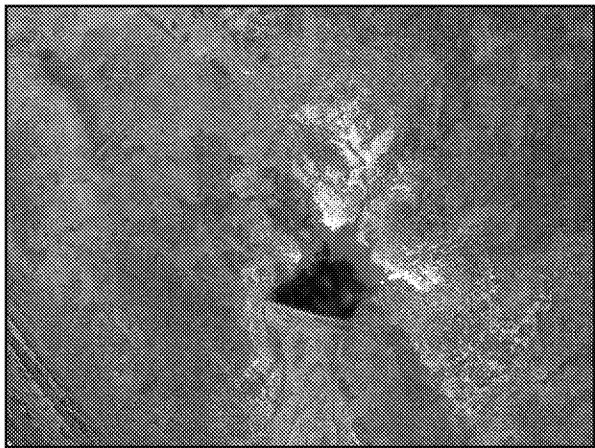
1. Does not currently serve as a source of drinking water and
2. Is mineral producing or can be demonstrated to contain commercially producible minerals.

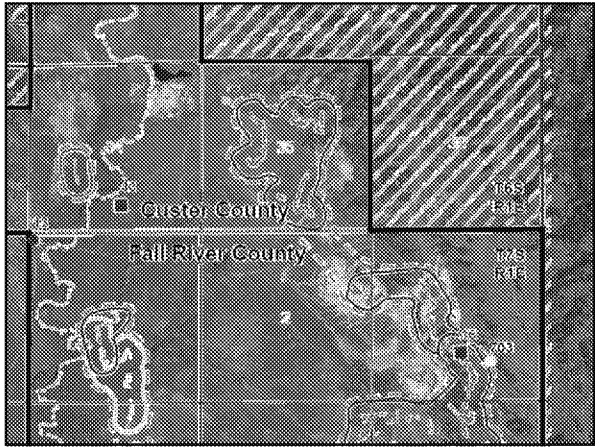


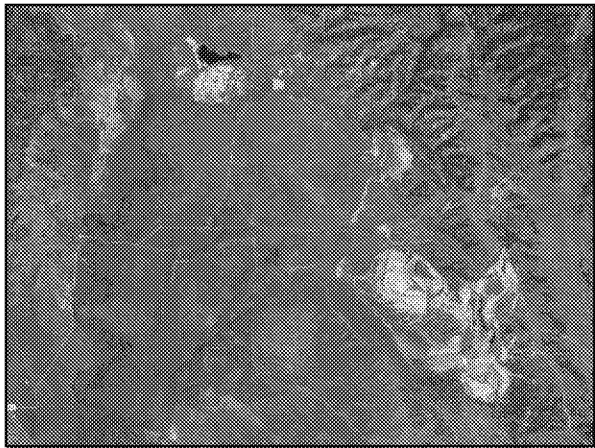












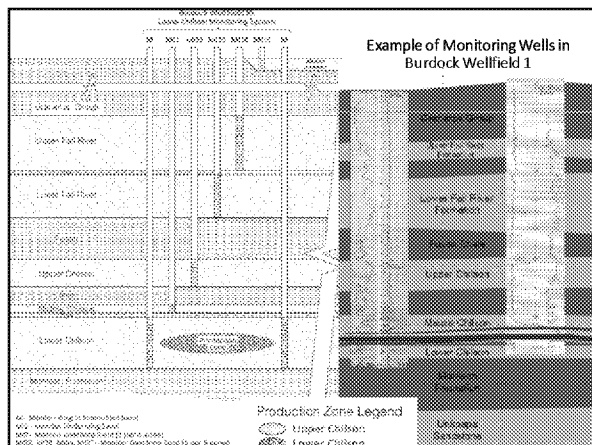
UIC Regulations

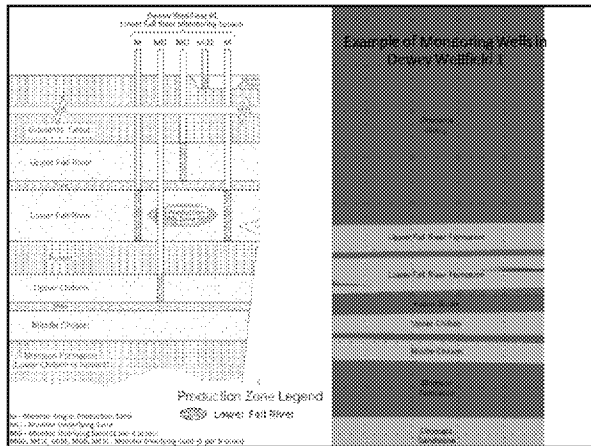
- UIC regulations require the permittee to conduct considerable testing to provide EPA hydrogeological and other data before any injection wells are authorized to operate.
- The data must demonstrate vertical confinement to prevent movement of fluids out of the injection zone so that no USDWs are contaminated.
- The data must also demonstrate that it is possible to contain injection zone fluids horizontally to prevent contaminant migration into USDWs.

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UIC Regulations

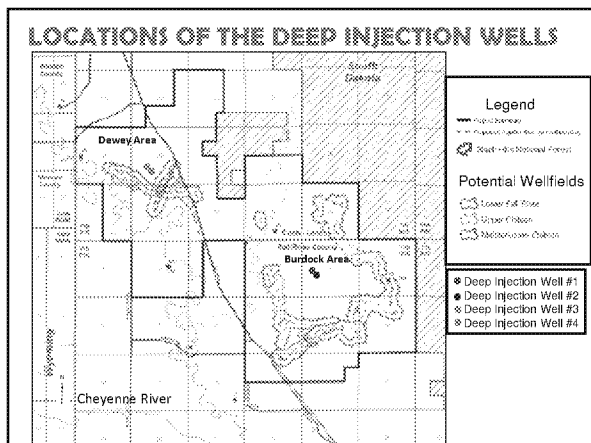
- UIC regulations require protection of USDWs around the AE area through extensive monitoring.
- UIC regulations require that no ISR process contaminants cross the aquifer exemption boundary during or after ISR operations.

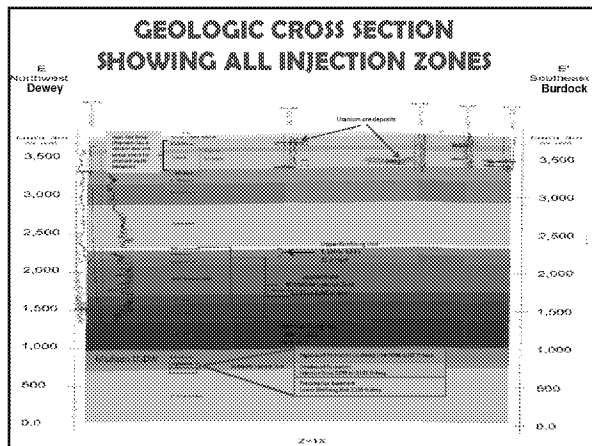




UIC Regulations

- UIC regulations authorize enforcement action when UIC regulations and/or permit conditions are violated.
- Enforcement actions can include requirements for groundwater remediation activities if appropriate.





UIC Permitting Process

- After issuance of any draft permit and aquifer exemption decisions, there will be a 60 day public review and comment period.
- Other reviews required in UIC permitting process:
 - *Endangered Species Act*,
 - *National Historic Preservation Act 106 consultation*,
 - *Environmental Justice Analysis*,
 - *Cumulative effects of construction and operation of injection wells*.
- The EPA will hold at least two public hearings in South Dakota.
- The EPA will conduct additional outreach in Tribal communities upon request.

National Historic Preservation Act

- EPA's NHPA obligations:
 - Consider the effects of the undertaking on historic properties
 - Consult with tribes (and others) during our review
 - EPA has the option of designating NRC as the lead for this process, or of conducting the review ourselves.
- We currently reviewing the NHPA process.
- Information is available to the public at <http://adams.nrc.gov/ehd>.
- We welcome input from tribes on historic properties in the project area.

Ways in which Tribal Officials Can Be Involved in the UIC Permitting Process

- Participate in informal and formal government to government consultation.
- Request informational web conferences on topics of concern.
- Review and comment on any proposed permit and aquifer exemption decisions.
- Attend public hearings.

Past and Future Topics for EPA Informational Web Conferences

- Cheyenne River Water Quality February, 2013
- Radiation and Uranium In Situ Recovery (ISR) Facilities April, 2013
- Underground Injection Control June, 2013
- Seismicity TBD
- Additional topics may include: Preliminary Assessment of the abandoned mines and plans for further investigation.

Questions & Discussion
